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## CARDIOVASCULAR FLASHLIGHT

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# Diagnosis of obstructive thrombosis in a porcine bioprosthesis in the aortic position by contrast-enhanced ECG-gated computer tomography

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We present a 74-year-old patient who underwent aortic valve replacement with a porcine bioprosthesis (St Jude Medical Epic 23 mm) because of severe aortic stenosis. On a routine visit 1-year postoperatively, the patient reported mild symptoms of angina (CCS 2). Doppler echocardiography demonstrated a mean gradient of 62 mmHg. Transoesophageal echocardiography (TOE) is often inconclusive because of shadowing of the bioprosthesis ring, and therefore, was not performed. Contrast-enhanced ECG-gated computer tomography (ECG-gated CT) showed substantial thickening of the bioprosthetic leaflets (Supplementary material online, Video S1; Panel A). On the basis of the assessment of an obstructive bioprosthetic valve thrombosis, the patient was started on oral anticoagulation (INR 2.5–3.0). Six months later, he was free of angina, on echocardiography, the mean gradient had decreased to 24 mmHg, and a repeat ECG-gated CT demonstrated resolution of leaflet thickening (Supplementary material online, Video S1; Panel B).

The diagnostic work-up of a high transvalvular Doppler gradient in a bioprosthetic valve is challenging, since fluoroscopy is incapable of visualizing bioprosthetic leaflets and echocardiography (including TEE) is often of limited value because of shadowing. In contrast, ECG-gated CT has the potential to visualize bioprosthetic structures including leaflets and, therefore, may differentiate thrombosis and pannus from patient prosthesis mismatch. Anticoagulation for obstructive thrombosis of bioprosthetic aortic valves in clinically stable patients appears safe, and timely use of ECG-gated CT may obviate the need for further diagnostic procedures and repeat surgery in this subset of patients.

Supplementary material is available at *European Heart Journal* online.

